

**EAST SHORE WATER POLLUTION ABATEMENT
FACILITY
NEW HAVEN WPCA**

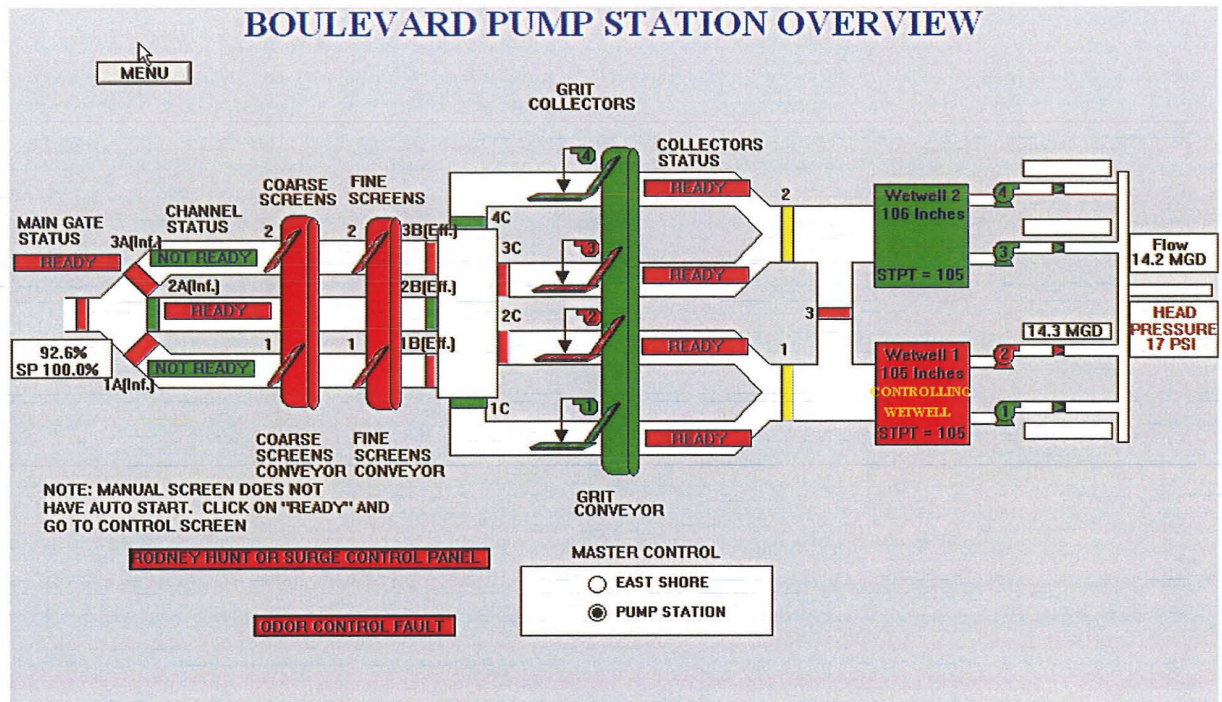
**BOULEVARD PUMP STATION SOP
JUNE 2003**



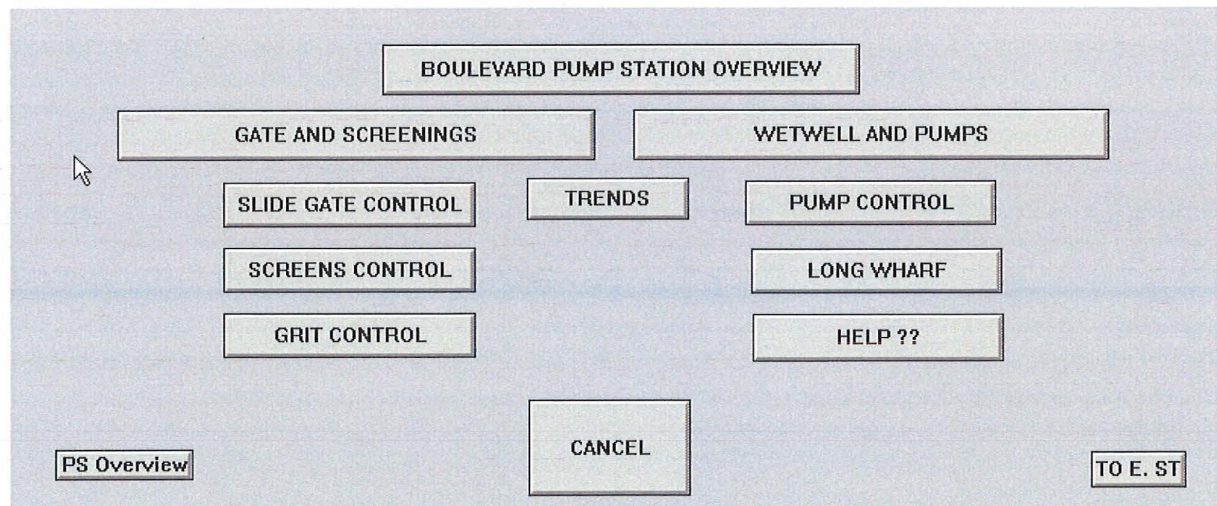
CONTENTS

BOULEVARD PUMP STATION OVERVIEW AND MENU SCREENS	3
BOULEVARD SCREENINGS CHANNEL SOP	4
BOULEVARD GRIT SYSTEM SOP	8
BOULEVARD RAW PUMPS SOP	12
BOULEVARD ALARM SCREEN SOP	17
BOULEVARD "AS LEFT" CONDITIONS	22

BOULEVARD PUMP STATION OVERVIEW



BOULEVARD PUMP STATION OVERVIEW SCREEN



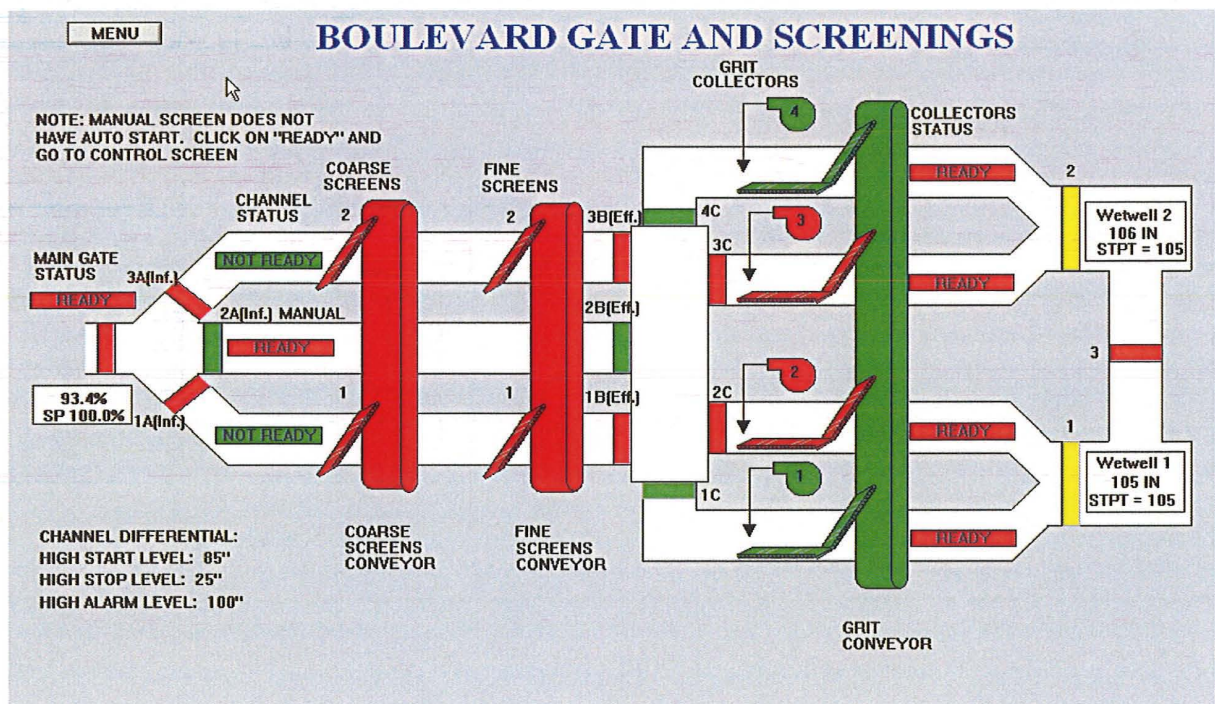
BOULEVARD PUMP STATION MENU SCREEN

BOULEVARD PUMP STATION SCREENINGS CHANNEL SOP

GO TO OVERVIEW SCREEN AND SEE THE STATUS OF THE SCREENING CHANNEL THAT YOU WANT TO PUT INTO SERVICE. IF THE CHANNEL IS "READY", GO TO AUTOMATIC OPERATION - START BELOW. IF THE CHANNEL IS "NOT READY", CHECK THE FOLLOWING:

CHECK THE SCREENINGS SLIDE GATES

- ON THE OVERVIEWSCREEN, HIT ANYWHERE NEAR THE SCREEN CHANNEL DISPLAY. SHOULD SHOW JUST THE CHANNEL, BAR SCREENS AND WETWELL. HIT ANY OF THE SLIDE GATES DISPLAY. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE CHANNEL GATES, BAR SCREEN GATES, AND WETWELL GATES.
- CHECK THE STATUS OF THE GATES THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE RODNEY HUNT PANEL AND PUT THE MAN/AUTO SELECTOR SWITCH FOR THE GATE INTO AUTO. ON THE SCREEN, THE STATUS SHOULD BE "READY".
- WHEN A GATE IS "READY" YOU CAN MANUALLY CONTROL THE GATE BY HITTING "OPEN"/"STOP"/"EXIT" ON THE SLIDE GATE CONTROL SCREEN.



BOULEVARD PUMP STATION GATE AND SCREENING SCREEN

MENU

BOULEVARD SLIDE GATE CONTROL

	STATUS	MODE
CHANNEL 1 INFLUENT SLIDE GATE(1A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 1 EFFLUENT SLIDE GATE(1B)	NOT READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 INFLUENT SLIDE GATE(2A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 EFFLUENT SLIDE GATE(2B)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 INFLUENT SLIDE GATE(3A)	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 EFFLUENT SLIDE GATE(3B)	NOT READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 1C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 2C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 3C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 4C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
WETWELL SLUICE GATE 1		<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
WETWELL SLUICE GATE 2		<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
WETWELL SLUICE GATE 3		<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE

BOULEVARD PUMP STATION SLIDE GATE CONTROL SCREEN

CHECK THE BAR SCREENS AND CONVEYORS

- A. ON THE SCREEN, HIT ANYWHERE NEAR THE SCREEN CHANNEL DISPLAY. SHOULD SHOW JUST THE CHANNEL, BAR SCREENS AND WETWELL. HIT ANY OF THE BAR SCREEN OR CONVEYOR. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE BAR SCREENS AND CONVEYORS.
- B. CHECK THE STATUS OF THE SCREENS AND CONVEYORS THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE SCREEN ROOM AND PUT THE LOCAL/REMOTE SELECTOR SWITCH FOR THE SCREEN OR CONVEYOR INTO REMOTE. ON THE SCREEN, THE STATUS SHOULD BE "READY".
- C. WHEN A SCREEN OR CONVEYOR IS "READY" YOU CAN MANUALLY CONTROL THE SCREEN OR CONVEYOR HITTING "HAND" ON THE SCREENS CONTROL SCREEN. HIT "OFF" TO STOP THE SCREEN OR CONVEYOR.

MENU

BOULEVARD SCREENS CONTROL

IF YOU HAVE SHEAR PIN ALARM, YOU HAVE TO GO TO THE PUMP STATION AND HIT THE LOCAL STOP PUSHBUTTON TO RESET THE ALARM.

	STATUS	MODE	OFF TIME	ON TIME
COARSE BAR SCREEN 1	READY OFF	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	10.0 min	5.0 min
COARSE BAR SCREEN 2	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	10.0 min	5.0 min
COARSE SCREEN CONVEYOR	READY OFF	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	20.0 min	5.0 min
FINE BAR SCREEN 1	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	10.0 min	5.0 min
FINE BAR SCREEN 2	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	10.0 min	5.0 min
FINE SCREEN CONVEYOR	READY ON	<input checked="" type="radio"/> HAND <input type="radio"/> OFF <input type="radio"/> AUTO	20.0 min	5.0 min

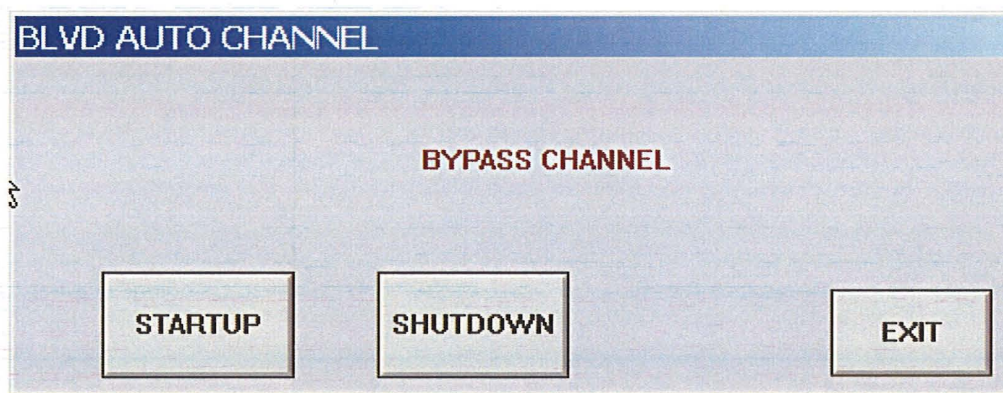
BOULEVARD SCREENS CONTROL SCREEN

AUTOMATIC OPERATION - START

- A. PRIOR TO OPERATING THE SLIDE GATES, SCREENS, AND CONVEYORS IN AUTOMATIC, VERIFY THE ON/OFF TIMES FOR THE SCREENS AND CONVEYORS ARE SET. HIT "MENU". HIT "SCREEN CONTROL". SET THE ON AND OFF TIMES FOR THE EQUIPMENT TO BE CONTROLLED.
- B. HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "EXIT" SELECTIONS. HIT "STARTUP".
- C. WHEN "STARTUP" IS SELECTED, THE FOLLOWING SEQUENCE WILL HAPPEN:
 - 1) THE "A" SLIDE GATE WILL OPEN.
 - 2) WHEN "A" GATE IS OPEN, THE "B" GATE WILL OPEN.
 - 3) WHEN THE "B" GATE IS OPEN, THE COARSE AND FINE BAR SCREENS WILL START.
 - 4) WHEN THE COARSE SCREEN IS ON, THE COARSE SCREEN CONVEYOR WILL START.
 - 5) WHEN THE FINE SCREEN IS ON, THE FINE SCREEN CONVEYOR WILL START.
- D. CHANNEL IS NOW IN AUTOMATIC MODE OF OPERATION.

AUTOMATIC OPERATION - STOP

- A. IF YOU WANT TO STOP THE SEQUENCE, HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "CANCEL" SELECTIONS. HIT "SHUTDOWN".**
- B. THE FOLLOWING SEQUENCE WILL HAPPEN:**
- 1) THE "A" GATE WILL CLOSE.**
 - 2) WHEN "A" GATE IS CLOSED, THE "B" GATE WILL CLOSE.**
 - 3) WHEN THE "A" GATE STARTS TO CLOSE, THE COARSE AND FINE BAR SCREENS WILL STOP.**
 - 4) WHEN COARSE SCREEN IS OFF, THE COARSE SCREEN CONVEYOR WILL STOP.**
 - 5) WHEN THE FINE SCREEN IS OFF, THE FINE SCREEN CONVEYOR WILL STOP.**



TYPICAL AUTO CHANNEL STARTUP AND SHUTDOWN SCREEN

BOULEVARD PUMP STATION GRIT SYSTEM SOP

GO TO OVERVIEW SCREEN AND SEE THE STATUS OF THE GRIT CHANNEL THAT YOU WANT TO PUT INTO SERVICE. IF THE CHANNEL IS "READY", GO TO AUTOMATIC OPERATION START DESCRIPTION BELOW. FOR A CHANNEL TO BE READY, ALL OF THE FOLLOWING STATUS MUST BE SATISFIED:

- 1. THE INLET GATE IS READY.**
- 2. THE GRIT COLLECTOR IS READY.**
- 3. THE GRIT COLLECTOR IS IN AUTO ON THE GRIT CONTROL SCREEN.**
- 4. THE GRIT BLOWER IS READY.**
- 5. THE GRIT BLOWER IS IN AUTO ON THE GRIT CONTROL SCREEN.**

IF THE CHANNEL IS "NOT READY", CHECK THE FOLLOWING:

CHECK THE GRIT SLIDE GATES

- A. ON THE OVERVIEW SCREEN, HIT ANYWHERE NEAR THE SCREEN CHANNEL DISPLAY. SHOULD SHOW JUST THE CHANNEL, GRIT COLLECTORS, GRIT CONVEYOR, BLOWERS, AND WETWELL. HIT ANY OF THE SLIDE GATES DISPLAY. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE CHANNEL GATES, BAR SCREEN GATES, AND WETWELL GATES.**
- B. CHECK THE STATUS OF THE GATES THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE RODNEY HUNT PANEL AND PUT THE MAN/AUTO SELECTOR SWITCH FOR THE GATE INTO AUTO. ON THE SCREEN, THE STATUS SHOULD BE "READY".**
- C. WHEN A GATE IS "READY" YOU CAN MANUALLY CONTROL THE GATE BY HITTING "OPEN"/"STOP"/"CLOSE" ON THE SLIDE GATE CONTROL SCREEN.**

MENU

BOULEVARD SLIDE GATE CONTROL

	STATUS	MODE
CHANNEL 1 INFLUENT SLIDE GATE[1A]	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 1 EFFLUENT SLIDE GATE[1B]	NOT READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 INFLUENT SLIDE GATE[2A]	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 2 EFFLUENT SLIDE GATE[2B]	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 INFLUENT SLIDE GATE[3A]	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
CHANNEL 3 EFFLUENT SLIDE GATE[3B]	NOT READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 1C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 2C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 3C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
GRIT CHANNEL SLIDE GATE 4C	READY	<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
WETWELL SLUICE GATE 1		<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
WETWELL SLUICE GATE 2		<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE
WETWELL SLUICE GATE 3		<input type="radio"/> OPEN <input checked="" type="radio"/> STOP <input type="radio"/> CLOSE

BOULEVARD PUMP STATION SLIDE GATE CONTROL SCREEN

CHECK THE GRIT COLLECTORS, GRIT CONVEYOR AND BLOWERS

- A. ON THE OVERVIEW SCREEN, HIT ANYWHERE NEAR THE GRIT SYSTEM DISPLAY. SHOULD SHOW JUST THE GRIT COLLECTORS, GRIT CONVEYOR, AND BLOWERS. HIT ANY OF THE GRIT COLLECTORS, GRIT CONVEYOR OR BLOWER. THIS SHOULD SHOW THE STATUS AND MODE OF ALL OF THE GRIT COLLECTORS, GRIT CONVEYOR, AND BLOWERS.
- B. CHECK THE STATUS OF THE GRIT COLLECTORS, GRIT CONVEYOR AND BLOWERS THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", FOR THE GRIT COLLECTORS AND GRIT CONVEYOR, GO TO THE SCREEN ROOM AND PUT THE LOCAL/REMOTE SELECTOR SWITCH FOR THE COLLECTORS AND CONVEYOR INTO REMOTE. ON THE SCREEN, THE STATUS SHOULD BE "READY". FOR THE GRIT BLOWERS, GO TO THE BLOWER ROOM AND PUT THE LOCAL/REMOTE SELECTOR SWITCH INTO REMOTE. THE STATUS FOR THE BLOWER SHOULD BE "READY".
- C. WHEN A GRIT COLLECTOR, GRIT CONVEYOR OR BLOWER IS "READY", YOU CAN MANUALLY CONTROL THE GRIT COLLECTOR, GRIT CONVEYOR, OR BLOWER BY HITTING "HAND" ON THE GRIT CONTROL SCREEN. HIT "OFF" TO STOP THE SCREEN OR

CONVEYOR. FOR AUTOMATIC OPERATION, HIT "AUTO" FOR THE GRIT COLLECTOR, GRIT CONVEYOR, OR BLOWER THAT IS TO BE OPERATED AUTOMATICALLY.

BOULEVARD GRIT CONTROL

MENU

	STATUS	MODE	OFF TIME	ON TIME
GRIT BLOWER 1	READY OFF	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO		
GRIT BLOWER 2	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO		
GRIT BLOWER 3	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO		
GRIT BLOWER 4	READY OFF	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO		
GRIT COLLECTOR 1	READY OFF	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	30.0 min	5.0 min
GRIT COLLECTOR 2	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	20.0 min	5.0 min
GRIT COLLECTOR 3	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	20.0 min	5.0 min
GRIT COLLECTOR 4	READY OFF	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	20.0 min	5.0 min
GRIT CONVEYOR	READY ON	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	20.0 min	5.0 min

BOULEVARD GRIT CONTROL SCREEN

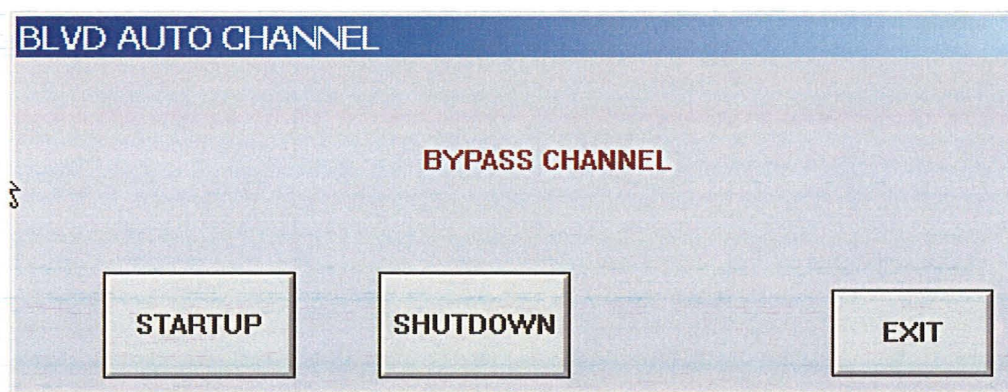
AUTOMATIC OPERATION - START

- A. PRIOR TO OPERATING THE SLIDE GATE, GRIT COLLECTOR, BLOWER AND GRIT CONVEYOR IN AUTOMATIC, VERIFY THE ON/OFF TIMES FOR THE GRIT COLLECTOR AND GRIT CONVEYOR ARE SET. HIT "MENU". HIT "SCREEN CONTROL". SET THE ON AND OFF TIMES FOR THE EQUIPMENT TO BE CONTROLLED.
- B. HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "EXIT" SELECTIONS. HIT "STARTUP".
- C. THE FOLLOWING SEQUENCE WILL HAPPEN:
 1. THE "C" SLIDE GATE WILL OPEN.
 2. WHEN "C" GATE IS OPEN, THE GRIT COLLECTOR WILL START.
 3. WHEN THE GRIT COLLECTOR IS ON, THE GRIT BLOWER WILL START.
 4. THE GRIT CONVEYOR WILL START AND TURN ON AND OFF BASED ON THE TIMER SETTINGS.

5. CHANNEL IS NOW IN AUTOMATIC MODE OF OPERATION.

AUTOMATIC OPERATION - STOP

- A. IF YOU WANT TO STOP THE SEQUENCE, HIT "MENU". HIT "GATES AND SCREENINGS". THE CHANNEL THAT YOU WANT TO BE IN SERVICE SHOULD NOW BE "READY". HIT THE "READY" RECTANGLE. SHOULD SEE A POPUP THAT HAS "STARTUP", "SHUTDOWN" AND "CANCEL" SELECTIONS. HIT "SHUTDOWN".
- B. THE FOLLOWING SEQUENCE WILL HAPPEN:
1. THE "C" GATE WILL CLOSE.
 2. WHEN "C" GATE IS CLOSED, THE GRIT COLLECTOR WILL STOP.
 3. WHEN THE GRIT COLLECTOR IS OFF, THE GRIT BLOWER WILL STOP.
 4. WHEN THE GRIT BLOWER IS OFF, THE GRIT CONVEYOR WILL STOP.



TYPICAL CHANNEL STARTUP AND SHUTDOWON SCREEN

BOULEVARD PUMP STATION RAW PUMPS SOP

- 1. GO TO OVERVIEW SCREEN AND SEE THE STATUS OF THE RAW PUMPS THAT YOU WANT TO PUT INTO SERVICE. IF THE PUMP IS "READY", GO TO AUTOMATIC OPERATION - START DESCRIPTION BELOW. IF THE PUMP IS "NOT READY", CHECK THE FOLLOWING:**

CHECK THE PUMPS DRIVE PANELS

- A. ON THE OVERVIEW SCREEN, HIT ANYWHERE NEAR THE RAW PUMPS DISPLAY. NEW DISPLAY SHOULD SHOW JUST THE WETWELL GATES, WETWELLS, AND RAW PUMPS. HIT ANY RAW PUMP DISPLAY. NEW DISPLAY SHOULD SHOW THE STATUS AND MODE OF ALL OF THE WETWELLS AND RAW PUMPS.**
- B. CHECK THE STATUS OF THE PUMPS THAT YOU WANT TO PUT INTO SERVICE. IF THEY ARE "NOT READY", GO TO THE LOUIS ALLIS DRIVE PANEL OR THE PUMP TO BE IN SERVICE AND PUT THE MAN/OFF/AUTO SELECTOR SWITCH FOR THE PUMP INTO AUTO. ON THE SCREEN, THE STATUS SHOULD BE "READY".**
- C. WHEN A PUMP IS "READY" YOU CAN MANUALLY CONTROL THE PUMP BY HITTING "HAND"/"OFF"/"AUTO" ON THE PUMP CONTROL SCREEN. IN "HAND" MODE YOU WILL ALSO NEED TO MANUALLY SET THE PUMP SPEED ON THE SCREEN. THE PUMP SPEED RANGE IS 154 RPM TO 580 RPM. SET THE SPEED TO APPROX. 400 RPM SO THAT WHEN THE PUMP STARTS, THERE IS ENOUGH PRESSURE TO OPEN THE PUMP CONTROL VALVE. BEFORE PUTTING THE PUMP INTO AUTOMATIC MODE, SEE AUTOMATIC OPERATION - START DESCRIPTIONS BELOW!!!!**

BOULEVARD PUMP CONTROL

MENU

		STATUS	SPEED SPEED OUTPUT	PUMP MODE	MANUAL SETPOINT	CURRENT FLOW TOTALIZED FLOW	
WETWELL 2 LEVEL: 106 INCHES STPT = 105	PUMP 4	READY OFF STANDBY		<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	259 RPM	553.163 MG	4
	PUMP 3	READY OFF LAG		<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	259 RPM	2,101.674 MG	3
WETWELL 1 LEVEL: 106 INCHES CONTROLLING WETWELL STPT = 105	PUMP 2	READY ON LEAD	502 RPM 502 RPM	<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	502 RPM	14.4 MGD 1,657.970 MG	2
	PUMP 1	READY OFF BACKUP		<input type="radio"/> HAND <input type="radio"/> OFF <input checked="" type="radio"/> AUTO	259 RPM	242.319 MG	1

LEAD ALTERNATE

☒ AUTO ☐ MANUAL

AUTO ALTERNATE TIME: 24 HRS

TIME REMAINING: 24 HRS. 0 MINS

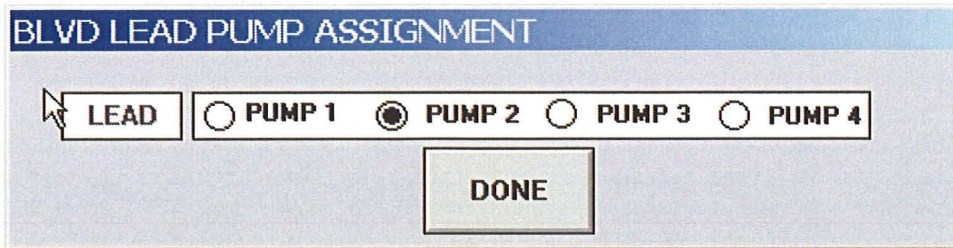
PUMP CONTROL
SETPOINTS

LEAD PUMP
ASSIGNMENT

BOULEVARD PUMP STATION PUMP CONTROL SCREEN

CHECK OUT PRIOR TO AUTOMATIC OPERATION

- A. PRIOR TO PUTTING THE PUMPS IN AUTOMATIC MODE ON THE PUMP CONTROL SCREEN, DO THE FOLLOWING:
- B. FROM THE MENU SCREEN, HIT "PUMP CONTROL". ON THE PUMP CONTROL SCREEN, HIT "LEAD PUMP ASSIGNMENT". THE POP-UP WILL ALLOW LEAD PUMP ASSIGNMENT AND SELECTIONS FOR PUMP 1, PUMP, 2, PUMP 3, AND PUMP 4. THE LEAD/LAG/STANDBY PUMPS START AND STOP ORDER ARE BASED LEAD PUMP SELECTION. IF YOU SELECT "PUMP 1", PUMP 1 WILL BE THE LEAD, PUMP 2 WILL BE THE LAG, AND PUMP 3 WILL BE THE STANDBY. IF YOU SELECT "PUMP 4", PUMP 4 WILL BE THE LEAD, PUMP 1 WILL BE THE LAG, AND PUMP 2 WILL BE THE STANDBY. AFTER THE SELECTIONS, GO TO THE PUMP CONTROL SCREEN. YOU SHOULD SEE WHICH PUMP ARE SET FOR LEAD, LAG, STANDBY, AND BACKUP.



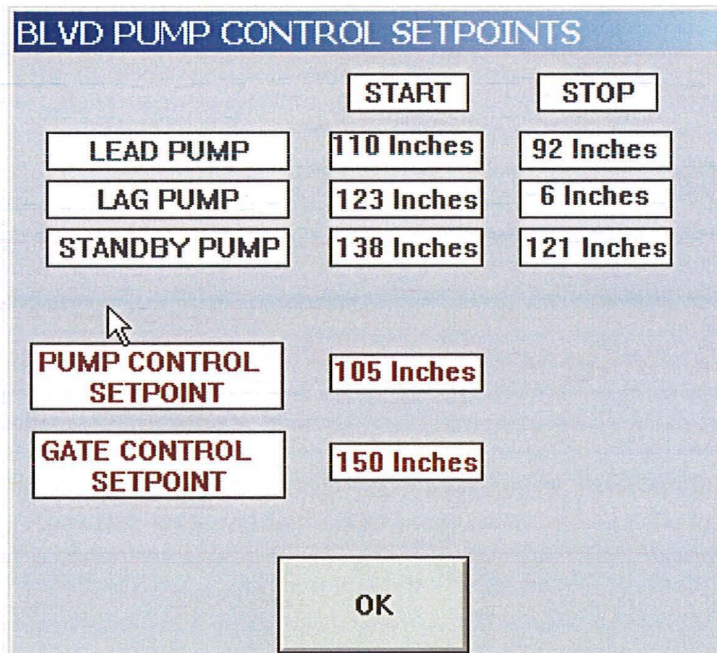
BLVD LEAD PUMP ASSIGNMENT

☒ LEAD
 ☐ PUMP 1
 ☒ PUMP 2
 ☐ PUMP 3
 ☐ PUMP 4

DONE

BOULEVARD PUMP STATION LEAD PUMP ASSIGNMENT SCREEN

- C. VERIFY THE PUMPS START AND STOP LEVEL SETPOINTS AND THE WETWELL LEVEL SETPOINT. ON THE PUMP CONTROL SCREEN THERE IS A "PUMP CONTROLS" RECTANGLE. HIT THE RECTANGLE. THERE WILL BE A POP-UP THAT HS THE LEAD, LAG, AND STANDBY PUMPS START AND STOP LEVEL SETPOINTS. ALSO ON THE SCREEN ARE THE WETWELL LEVEL AND GATE CONTROL SETPOINTS. THE VALUES TO ENTER ARE BASED ON HOW THE STATION IS TO BE OPERATED AND SHOULD BE MANUALLY RECORDED INTO THE STATION LOG WHENEVER A CHANGE IS MADE.



BLVD PUMP CONTROL SETPOINTS

	START	STOP
LEAD PUMP	110 Inches	92 Inches
LAG PUMP	123 Inches	6 Inches
STANDBY PUMP	138 Inches	121 Inches

☒ PUMP CONTROL SETPOINT 105 Inches
☐ GATE CONTROL SETPOINT 150 Inches

OK

BOULEVARD PUMP STATION CONTROL SETPOINTS SCREEN

- D. VERIFY IF YOU WANT MANUAL OR AUTOMATIC ALTERNATION OF THE LEAD, LAG, AND STANDBY PUMPS. ON THE PUMPS CONTROL SCREEN THERE IS "LEAD ALTERNATE" RECTANGLE WITH "AUTO" AND "MANUAL" SELECTION. THE PRESENT SELECTION WILL BE IN RED. IF "MANUAL" IS SELECTED, THE PUMPS WILL NOT

ALTERNATE, THEY WILL BE OPERATED BASED ON THE LEAD, LAG, AND STANDBY SELECTIONS DESCRIBED ABOVE. IF "AUTO" IS SELECTED, THE PUMPS WILL AUTOMATICALLY OPERATE BASED ON THE "AUTO ALTERNATE TIME" ENTERED. THE TIME REMAINING BEFORE THE NEXT ALTERNATION IS DISPLAYED. THE ALTERNATION WILL FOLLOW THE SAME LEAD, LAG, AND STANDBY ORDER DESCRIBED ABOVE.

- E. SELECT WHICH WETWELL LEVEL SIGNAL WILL BE USED TO CONTROL THE PUMPS. GO TO THE OVERVIEW SCREEN AND HIT ANY WETWELL. A NEW SCREEN WITH WETWELL GATES, WETWELL AND RAW PUMPS WILL SHOW UP. HIT EITHER WETWELL. A POPUP "CHOOSE A WETWELL LEVEL FOR PUMP CONTROL" WILL APPEAR. SELECT WHICH WETWELL IS TO BE USED.
- F. SELECT WHICH CONTROL SYSTEM WILL CONTROL THE PUMPS. BECAUSE THE PUMPS ARE CRITICAL, THERE ARE TWO CONTROL SYSTEMS AVAILABLE, THE CONTROL SYSTEM INSIDE THE PANEL WITH THE SCREEN AND THE BACKUP PUMP CONTROL PANEL LOCATED BEHIND PUMP 3. WHICH SYSTEM TO CONTROL THE PUMPS IS SELECTED AT THE BACKUP PUMP CONTROL PANEL. ON THE BACKUP PUMP CONTROL PANEL THERE IS A BACKUP SELECTOR SWITCH WITH "DIS/EN" SELECTIONS. WHEN IN "EN", THE BACKUP PUMP CONTROL PANEL WILL CONTROL THE PUMPS. WHEN IN "DIS" THE CONTROL PANEL WITH THE SCREEN WILL CONTROL THE PUMPS. ONCE YOU SELECT "DIS", THE PUMPS WILL STOP. YOU WILL THEN NEED GO TO THE SCREEN AND FOLLOW THE AUTOMATIC OPERATION - START DESCRIBED!!!! FAILURE TO DO THIS WILL RESULT IN NO PUMPS OPERATING!!!

AUTOMATIC OPERATION - START

GO TO THE MENU SCREEN AND HIT "PUMPS CONTROL". THE PUMP CONTROL SCREEN WILL APPEAR. SELECT "AUTO" FOR THOSE PUMPS THAT YOU WISH TO OPERATE. THE FOLLOWING SEQUENCE WILL HAPPEN:

- A. WHEN THE LEAD PUMP START LEVEL SETPOINT IS REACHED FOR THE LEAD PUMP, THE LEAD PUMP WILL START AND SPEED WILL INCREASE.
- B. WHEN THE PRESSURE ON THE PUMP DISCHARGE IS HIGHER THAN THE PIPELINE PRESSURE, THE SURGE VALVE WILL OPEN. A PRESSURE DIFFERENTIAL SWITCH AT THE PUMP IS USED TO DETECT THE PRESSURE.
- C. THE PUMP SPEED WILL AUTOMATICALLY ADJUST TO MAINTAIN THE WETWELL LEVEL SETPOINT.
- D. THE PUMP IS NOW ON-LINE.

- E. WHEN THE LAG PUMP START LEVEL SETPOINT IS REACHED, THE LAG PUMP WILL START SIMILAR TO THE LEAD PUMP SEQUENCE.
- F. WHEN THE STANDBY PUMP START LEVEL SETPOINT IS REACHED, THE STANDBY PUMP WILL START SIMILAR TO THE LEAD PUMP SEQUENCE.
- G. IF A PUMP IN THE SEQUENCE DOES NOT START, THE NEXT PUMP WILL START WHEN THE WETWELL LEVEL INCREASES TO THAT PUMP'S START SETPOINT.

AUTOMATIC OPERATION - STOP

- A. WHEN THE WETWELL LEVEL FALLS BELOW THE PUMP STOP SETPOINT, THE FOLLOWING SEQUENCE WILL HAPPEN:
 - 1. THE PUMP HYDRAULIC VALVE WILL CLOSE.
 - 2. WHEN THE VALVE IS CLOSED, THE PUMP WILL SLOW DOWN.
 - 3. AFTER A DELAY, THE PUMP WILL STOP.

MANUAL CONTROLS START

(THIS MODE IS NOT RECOMMENDED UNLESS THE STATION IS MANNED!)

GO TO THE MENU SCREEN AND HIT "PUMPS CONTROL". SET THE MANUAL PUMP SPEED TO 70 PERCENT. THE PUMP CONTROL SCREEN WILL APPEAR. SET THE MANUAL PUMP SPEED TO 70 PERCENT AND SELECT "HAND" FOR THOSE PUMPS THAT YOU WISH TO OPERATE. THE FOLLOWING SEQUENCE WILL HAPPEN:

- A. THE PUMP WILL START AND SPEED WILL INCREASE TO THE MANUAL SPEED SETPOINT..
- B. WHEN THE PRESSURE ON THE PUMP DISCHARGE IS HIGHER THAN THE PIPELINE PRESSURE, THE SURGE VALVE WILL OPEN. A PRESSURE DIFFERENTIAL SWITCH AT THE PUMP IS USED TO DETECT THE PRESSURE.
- C. THE PUMP IS NOW ON-LINE.

MANUAL CONTROLS STOP

- A. IF A PUMP IS PUT INTO "OFF" FROM THE SCREEN, THE FOLLOWING SEQUENCE WILL HAPPEN:
 - 1. THE PUMP HYDRAULIC VALVE WILL CLOSE.
 - 2. WHEN THE VALVE IS CLOSED, THE PUMP WILL SLOW DOWN.
 - 3. AFTER A DELAY, THE PUMP WILL STOP.

BOULEVARD STATION ALARM SCREEN SOP

NOTE-(A * NEXT TO ALARM INDICATES ACTION ON THE PART OF THE OPERATOR.**

NOTIFY THE APPROPRIATE PERSONNEL TO RESPOND TO THE PROBLEM.)

BUILDING UTILITIES ALARMS

- 1. GENERATOR RUN
INDICATES STATION GENERATOR IS RUNNING FROM EITHER A TEST OR POWER FAILURE**
- 2. GENERATOR FAILURE
INDICATES GENERATOR HAS FAILED DURING A TEST OR POWER FAILURE. *****
- 3. LOSS OF NORMAL POWER
INDICATES ELECTRIC SERVICE AS BEEN INTERRUPTED AT THE STATION. THE GENERATOR SHOULD HAVE STARTED AND THE TRANSFER SWITCH CLOSED TO EMERGENCY POWER. *****
- 4. ELECTRICAL GROUND FAULT
THE GROUND FAULT MONITOR AS SENSED A POTENTIAL TO GROUND AND WILL TRIP THE MAIN BREAKER FOR THE STATION. ALL POWER TO THE STATION WILL BE OFF. *****
- 5. BUILDING INTRUSION
INDICATES THAT A DOOR SWITCH HAS BEEN ACTIVATED. ALARM WILL NOT CLEAR TILL DOOR IS CLOSED. REQUIRES AFTER HOURS RESPONSE. *****
- 6. BOILER FAILURE
GENERAL ALARM FOR BOTH BOILERS. DOES NOT REQUIRE IMMEDIATE ACTION UNLESS ALARM FOR LOW BUILDING TEMPERATURE IS ALSO ACTIVATED. IN WHICH CASE CALL. *****

7. FIRE ALARM
INDICATES THAT A FIRE ALARM CONDITION EXISTS SOMEWHERE IN THE FACILITY.***
8. FIRE ALARM TROUBLE
INDICATES THAT WITHIN THE FIRE PANEL THERE IS A ZONE FAULT OR OTHER PROBLEM. PROBLEM CAN BE CORRECTED THE NEXT DAY. REPORT PROBLEM.
9. SUMP PIT HIGH LEVEL
INDICATES THE DRY WELL FLOAT IN THE BASEMENT HAS BEEN ACTIVATED AND A FLOODING CONDITION EXISTS. ***
10. HVAC FAILURE
INDICATES FAILURE OF ONE OF THE AIR HANDLING UNITS IN THE BUILDING. DOES NOT REQUIRE IMMEDIATE ACTION UNLESS ALARM FOR LOW BUILDING TEMPERATURE IS ALSO ACTIVATED. IN WHICH CASE CALL. ***
11. WETWELL GAS ALARM
INDICATES A HIGH LEVEL OF H₂S GAS IN THE WETWELL AREA.
NOTE: EXISTING SYSTEM DOES NOT FUNCTION.
12. PRETREATMENT GAS ALARM
INDICATES A HIGH LEVEL OF H₂S GAS IN THE PRETREATMENT AREA.
NOTE: EXISTING SYSTEM DOES NOT FUNCTION.
13. ODOR CONTROL FAILURE
INDICATES A GENERAL FAILURE OF THE ODOR CONTROL SYSTEM FOR THE PRETREATMENT AND WETWELL AREAS. NOTE: EXISTING SYSTEM DOES NOT FUNCTION.
14. LOSS OF COMMUNICATIONS
THIS IS WILL ONLY SHOW ON THE EAST SHORE SCREEN. INDICATES LOSS OF PHONE SERVICE BETWEEN EAST SHORE AND THE STATION.

15. LOSS OF INSTRUMENT AIR
INDICATES A MALFUNCTION OF THE AIR COMPRESSOR, WHICH SUPPLIES AIR TO THE WETWELL BUBBLER SYSTEM AND THE BAR SCREEN CHANNEL DIFFERENTIAL LEVEL INDICATOR. LOSS OF THIS

SIGNAL WILL RESULT IN PUMPS RUNNING OFF OF HIGH AND LOW PUMP FLOATS. ***

WETWELL AND PUMP CONTROL ALARMS

- 1. LOW SEAL WATER PRESSURE- COMMON TO EITHER PUMPS 1,2,3,4 INDICATES THAT SEAL WATER TO THE MECHANICAL SEALS ON ONE OF THESE PUMPS HAS BEEN LOST, WHICH WILL CAUSE THE AFFECTED PUMP TO SHUT DOWN. *****
- 2. VFD FAULT- COMMON TO EITHER PUMPS 1,2,3,4 INDICATES THAT A CONDITION IN THE AFFECTED PUMP DRIVES CAUSED THE DRIVE TO SHUT DOWN. *****
- 3. SURGE VALVE FAILURE INDICATES A PROBLEM EXISTS IN THE SURGE CONTROL PANEL , WHICH SUPPLIES HYDRAULIC PRESSURE TO OPEN AND CLOSE PUMP THE DISCHARGE VALVES FOR EACH PUMP. *****
- 4. WETWELL LOW LEVEL ALARM - COMMON TO EITHER WETWELL 1 OR 2 INDICATES THE LOW LEVEL FLOAT IN EITHER WETWELL 1 OR 2 HAS BEEN ACTIVATED. THIS WILL CAUSE PUMPS 1 AND 2 , WHICH DRAW FROM #1 WETWELL TO SHUT DOWN OR PUMPS 3 AND 4 TO SHUT DOWN ON WETWELL 2. THIS PROBLEM WILL USUALLY BE THE RESULT OF ANOTHER ALARM CONDITION. *****
- 5. HIGH WETWELL ALARM - COMMON TO EITHER WETWELL 1 OR 2 INDICATES THAT THE HIGH WETWELL FLOAT HAS BEEN ACTIVATED. WITH THIS CONDITION THE STATION SHOULD BE OPERATING WITH THREE PUMPS AT FULL SPEED. CHECK TO SEE THAT THE MAIN INFLUENT GATE TO THE STATION IS MODULATING IT SHOULD BE AT 10% OPEN LIMITING THE AMOUNT OF FLOW TO PREVENT THE WETWELLS FROM FLOODING. *****

PRETREATMENT AREA ALARMS

- 1. GRIT CHANNEL SHEAR PIN - COMMON TO EITHER 1,2,3,4 GRIT CHANNELS INDICATES THE OPERATING GRIT CHANNEL SHEAR PIN HAS BROKEN STOPPING THE GRIT CHANNEL.**

SHUT DOWN THE AFFECTED CHANNEL AND CLOSE THE INFLUENT GATE. START-UP THE NEXT AVAILABLE CHANNEL. IF NO CHANNELS ARE AVAILABLE CALL IN PERSONNEL. ***

2. GRIT CONVEYOR ZERO MOTION
INDICATES THE STARTER FOR THIS CONVEYOR IS PULLED IN AND THE MOTION SENSOR SEES NO ROTATION. ***
3. GRIT BLOWER FAILURE - COMMON TO EITHER BLOWER 1,2,3,4
INDICATES THE STARTER HAS TRIPPED FOR THE AFFECTED GRIT CHANNEL BLOWER. THIS CAN RESULT IN SOLIDS CARRY OVER TO THE WETWELL. CALL IN PERSONNEL IF THE PROBLEM CAN'T BE CORRECTED WITHIN 8 HRS. OR DURING A STORM EVENT. ***
4. BAR SCREEN SHEAR PIN ALARM - COMMON TO FINE AND COARSE BAR SCREENS 1 OR 2
INDICATES THE OPERATING BAR SCREEN SHEAR PIN HAS BROKEN STOPPING THE SCREEN FROM OPERATING. THIS PROBLEM NEEDS TO BE CORRECTED ASAP BEFORE THE BAR SCREEN BECOMES BLINDED BACKING UP THE FLOW EVENTUALLY CREATING A CSO EVENT. ***
5. FINE SCREEN AND COARSE SCREEN CONVEYOR ZERO MOTION
INDICATES THE STARTER FOR THIS CONVEYOR IS PULLED IN AND THE MOTION SENSOR SEES NO ROTATION. ***
6. HIGH SCREEN HEAD LOSS
UNDER NORMAL CONDITIONS THE BAR SCREENS WILL BE RUNNING IN AUTOMATIC OFF A PRESET TIMING CYCLE. WHEN THIS ALARM COMES IN IT WILL INDICATE THAT BETWEEN THE TIMING CYCLE THE DIFFERENTIAL ACROSS THE BAR SCREEN HAS CHANGES AND SHOULD START THE SCREEN. IF THIS CONDITION EXISTS FOR MORE THAN 15MIN. THAT COULD INDICATE A SHEAR PIN OR BAR SCREEN PROBLEM THAT WILL REQUIRE ATTENTION. ***
7. HIGH INFLUENT CHANNEL
ALARM INDICATES THAT THE LEVEL IN THE CHAMBER AFTER THE INFLUENT GATE IS HIGH. THIS WOULD NORMALLY BE ACCOMPANIED BY ADDITIONAL ALARMS OR DURING A STORM EVENT. THIS ALARM IS TO INFORM YOU THAT THE STATION WILL BE OVER FLOWING AT THE CSO SOON. ***
8. BYPASS ALARM
INDICATES THAT THE STATION IS OVER FLOWING AT THE CSO. ***

9. **HYDRAULIC CONTROL PANEL ALARM**
INDICATES A PROBLEM WITH THE HYDRAULIC CONTROL PANEL THAT OPERATES ALL THE GATES IN THE WETWELL, THE PRETREATMENT AREA AND THE MAIN GATE. IF THE GATES ARE RESPONDING REPORT THE CONDITION FOR REPAIR AS LONG AS ATTENTION CAN BE GIVEN WITHIN 8HRS. IF THE GATES DO NOT RESPOND CALL-IN PERSONNEL IMMEDIATELY. ***

AS "LEFT" CONDITIONS

THE FOLLOWING SETPOINTS AND PID TUNING PARAMETERS WERE ENTERED ONTO THE SCREEN ON 06/14/2003:

LEAD PUMP START	110"
LEAD PUMP STOP	92"
LAG PUMP START	123"
LAG PUMP STOP	110"
STANDBY PUMP START	138"
STANDBY PUMP STOP	121"
LEVEL CONTROL SETPOINT	105"
GATE CONTROL SETPOINT	150"
PID PROPORTIONAL	22
PID INTEGRAL	35

IT IS UNDERSTOOD THAT THESE VALUES MAY CHANGE DUE TO OPERATIONAL REQUIREMENTS.

IT IS NOTED THAT THE WETWELL LEVEL SIGNAL FROM WETWELL 1 IS NOT ACCURATE BECAUSE A TEMPORARY BUBBLER TUBE WAS PLACED DUE TO FAILURE OF THE ORIGINAL BUBBLER TUBE. IF A NEW TUBE IS INSTALLED, THE START AND STOP LEVELS MAY NEED TO BE CHANGED. THE PID TUNING PARAMETERS MAY ALSO NEED TO BE CHANGED.